

## Year 6 Shape Maths – 29.6.20

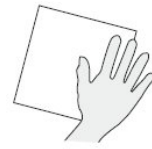
### SATS style questions

**Q1.** Here are some **regular** 2-D shapes.

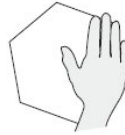
A hand hides part of each one.

Match each **regular** shape to its name.

One has been done for you.



pentagon



square



octagon

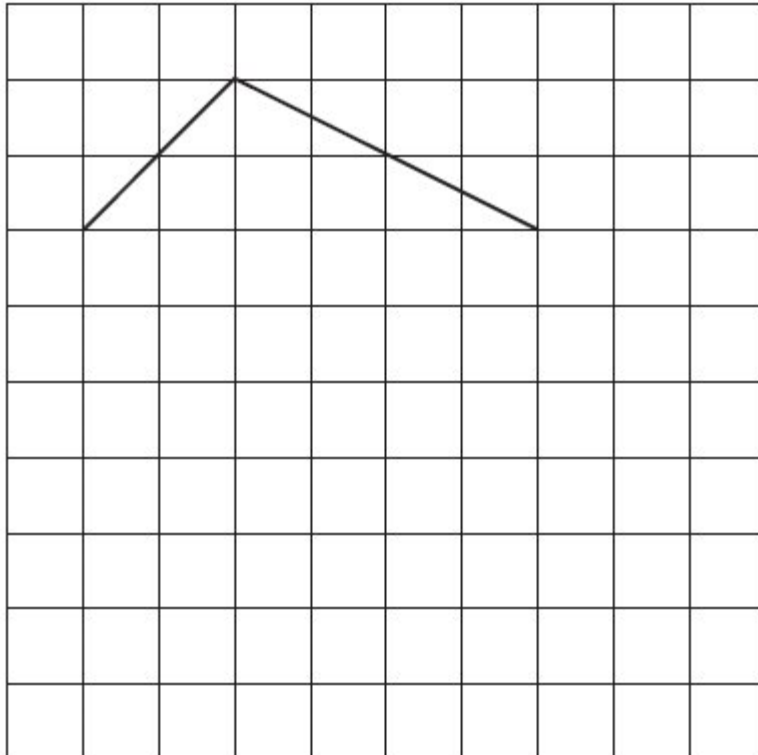


hexagon

**Q2.** The lines drawn on the grid are two sides of a **pentagon**.

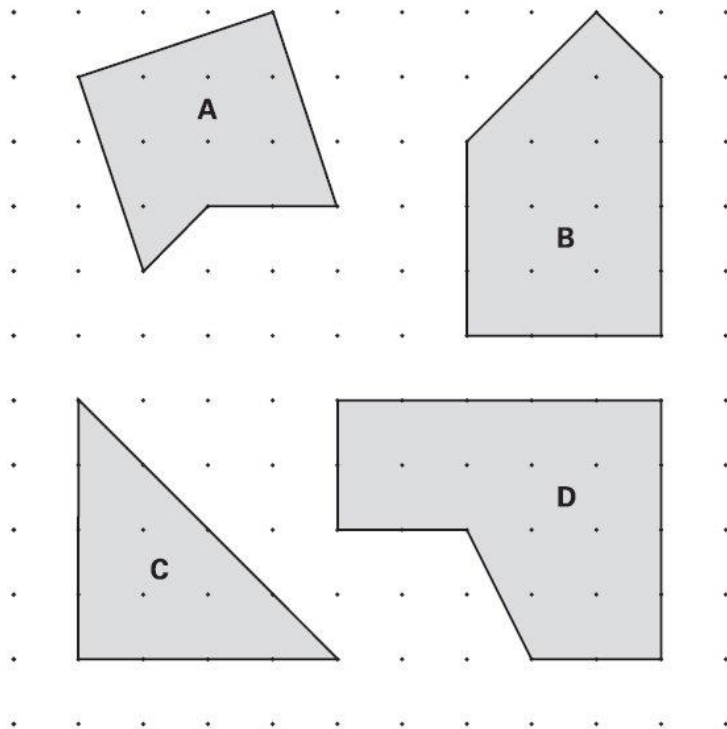
Complete the pentagon.

Use a ruler.



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**Q3.** Here are four shapes. They each have a different number of right angles.



Write the letter for each shape in the correct order.

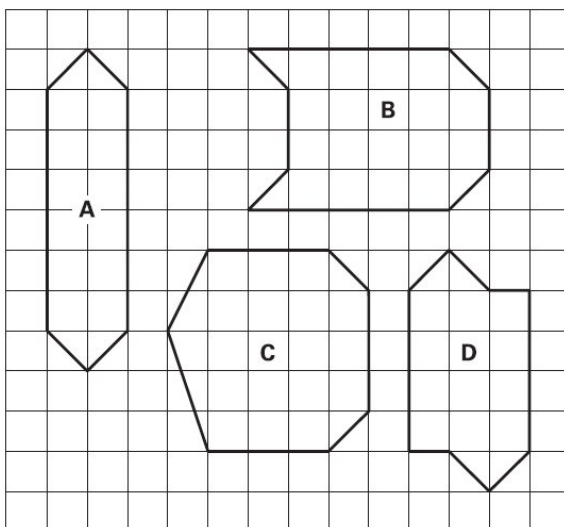
One has been done for you.

fewest  
right angles

most  
right angles

C			
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**Q4.** Here are four shapes on a square grid



	property of shape	
	is an octagon	has at least 1 right angle
shape A	✗	✓
shape B	✓	✗
shape C		
shape D		✓

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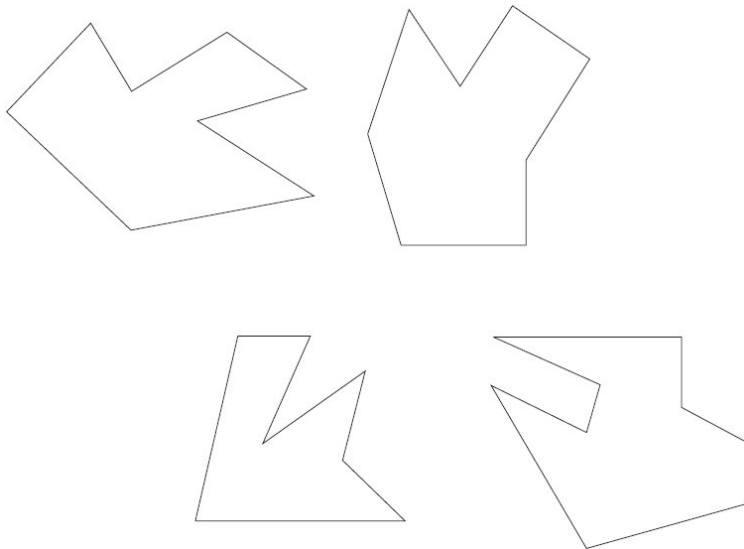
**Q5.** Complete the table.

	number of faces	number of edges
 cuboid		12
 square-based pyramid	5	

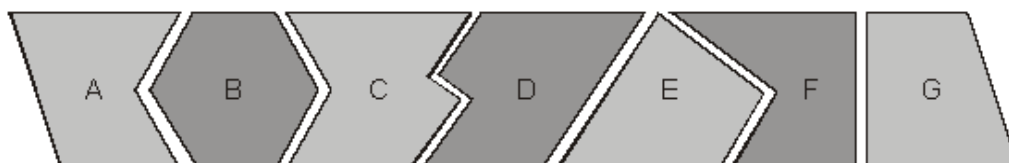
**Q6.** Here are some shapes.

**Two** of the shapes are **octagons**.


Put a tick (✓) on them.



**Q7.** Here are seven shapes.



Write the letters of the two shapes which are **pentagons**.

 ..... and .....

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**Q8.** This table shows information about four solid shapes.

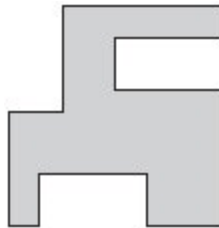
Complete the table.

One has been done for you.

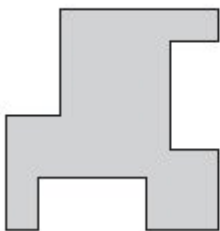
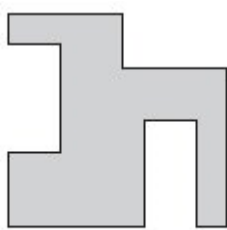
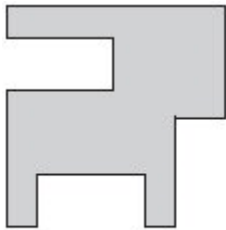
	number of <b>flat</b> surfaces	number of <b>curved</b> surfaces
sphere	0	1
cone		
cuboid		
cylinder		

2 marks

**Q9.** Here is a shape.



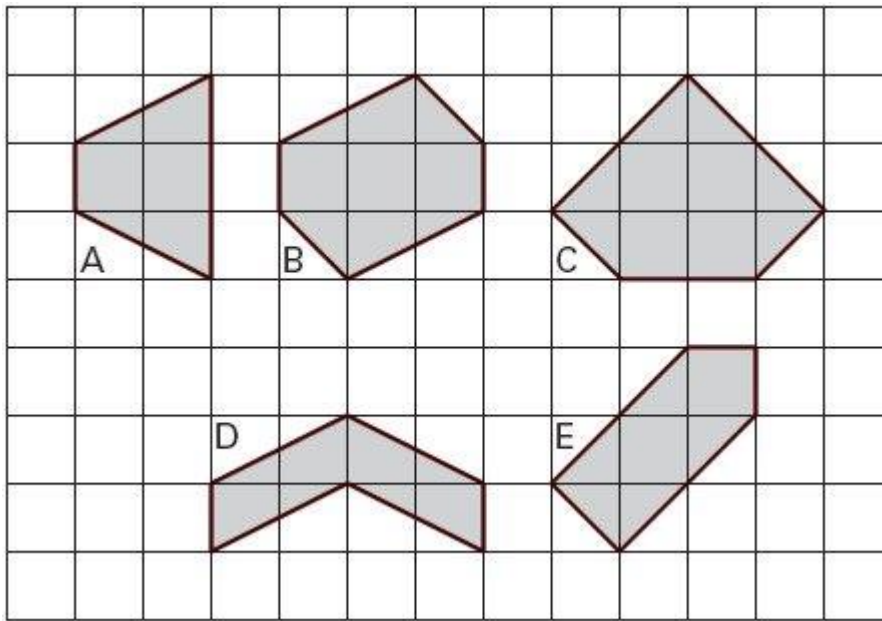
Put a tick (✓) on the shape below which is the same as the one above.



1 mark

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**Q10.** Here are some shaded shapes on a square grid.



Write the letters of the **two** shapes which are hexagons.

..... and .....

1 mark

Write the letters of the **two** shapes which have **right angles**.

..... and .....

1 mark

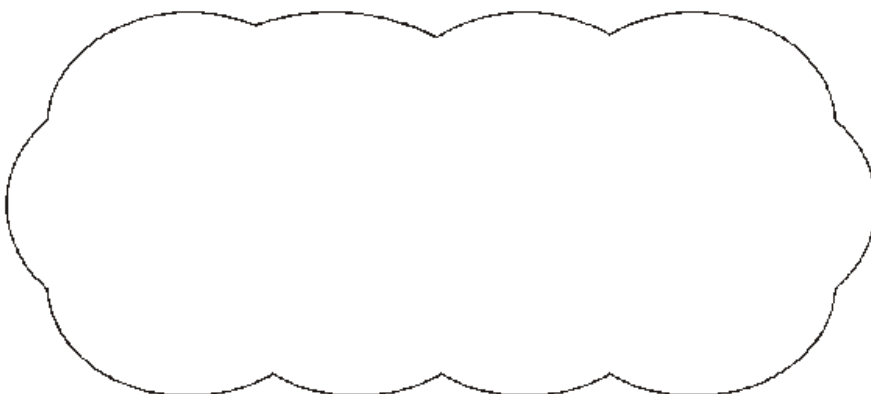
**Q11.** A square always has four sides.

Is it true that a four-sided shape is **always** a square?

Circle **Yes** or **No**

**Yes / No**

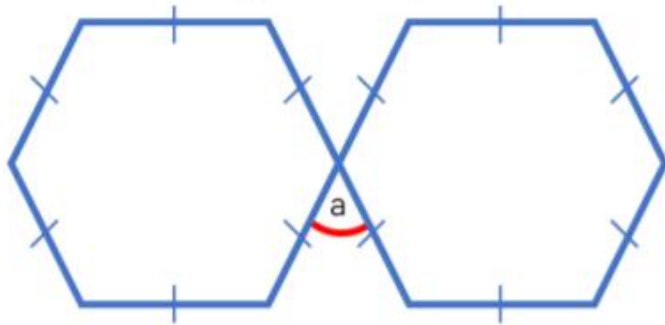
Explain how you know.



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### Reasoning Questions

Here are two regular hexagons.



The interior angles of a hexagon sum to  $720^\circ$

Use this fact to work out angle a in the diagram.

Use the clues to work out what shape each person has.

Dora



My polygon is made up of 5 triangles.

The sum of my angles is more than  $540^\circ$  but less than  $900^\circ$

Tommy



Alex



The sum of my angles is equivalent to the sum of angles in 3 triangles.

What is the sum of the interior angles of each shape?

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Use the same method to complete the table.

Shape	No. of sides	No. of triangles	$180 \times \text{no. of triangles}$	Sum of internal angles
Quadrilateral	4	2	$180 \times 2$	$360^\circ$
Pentagon	5	3		
Hexagon				
Heptagon				

What do you notice?

Can you predict the angle sum of any other polygons?

## Round a Hexagon

Age 7 to 11 ★

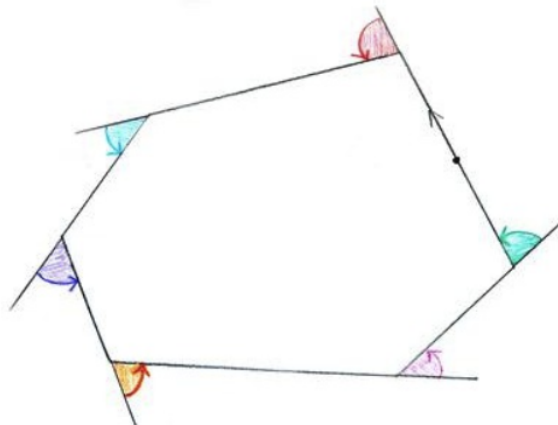
Brenda is walking round an irregular hexagon (a shape with six straight sides). She starts off part of the way along one of the sides.

At each vertex (corner) she turns.

How much does she turn in total when she has walked all the way round?

Use this example to prove that the sum of the external angles of any hexagon is 360 degrees.

The external angle is found by extending the side and measuring the angle between the extended line and the next side.



# Quadrilaterals

Age 7 to 11 ★★★

Quadrilaterals are shapes that have four straight sides.

Consider a circle with eight evenly-spaced dots round it.

How many DIFFERENT quadrilaterals can be made by joining the dots on the circle?

Can you work out the angles of all your quadrilaterals?

You might like to try using this interactive to record your ideas:

